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NOVEMBER 1966
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METEOROLOGICAL DATA REPORT

NIKE-HYDAC STV (SR-040)
(4 October 1966)

BY

LEN E. CARTER

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

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DA Task 1V650212A127-02

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ABSTRACT

Meteorological data gathered for the launching of Nike-Hydac STV (SR-010) are presented for the Ballistic Systems Division, U. S. Air Force, Avco Corporation, and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.

CONTENTS

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INTRODUCTION

Nike-Hydac STV (SR-040) was launched from Launch Complex 33, L-314, White Sands Missile Range (WSMR), New Mexico, at 0802 hours MST, 4 October 1966.

Meteorological data used in conjunction with theoretical calculations to predict rocket impact were collected by the Meteorological Support Division, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The Ballistics Meteorologists for this firing were Len E. Carter and Gordon L. Dunaway.

DISCUSSION

Wind data for the first 216 feet above the surface were obtained from a system composed of 5 Aerovanes mounted on a 200-foot tower and cabled to 5 component wind indicators.

From 216 to 4,000 feet above the surface, wind data were obtained from double-theodolite-observed balloon ascents.

Temperature, pressure, and humidity data, along with upper wind data from 4,000 to 73,497 feet above the surface, were obtained from standard rawinsonde observations.

Mean wind component values in each ballistic zone were determined from vertical cross sections by the equal-area method.

Theoretical rocket performance values and ballistic factors as a function of altitude were provided by ASL, and are the basis for data appearing in Table VIII.

PAYLOAD		233	Pounds
CORIOLIS DISPLACEMENT	WEST	4.9	Miles
SECOND-STAGE IGNITION	TIME	80.2	Seconds
	ALTITUDE	36,673	Feet MSL
PEAK	TIME	236.2	Seconds
	ALTITUDE	718,586	Feet MSL
UNIT WIND EFFECT			Miles/MPH
		2,575	Miles/MPH
			Miles/MPH
TOWER TILT EFFECT		14.08	Miles/Degree

TABLE I. THEORETICAL ROCKET PERFORMANCE VALUES
NIKE-HYDAC STV (SR-040)

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
00- 11	.0000
11- 60	.1482
60-108	.1028
108-148	.0671
148-184	.0544
184-216	.0315
216-300	.0835
300-400	.0681
400-600	.0727
600-800	.0503

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
800- 1000	.0438
1000- 1400	.0703
1400- 2000	.0563
2000- 2500	.0899
2500- 3000	.0166
3000- 3500	.0203
3500- 4000	.0041
4000- 4263	-.0067
4263- 9000	-.0109
9000-15000	-.0184

LAYERS IN FEET ABOVE GROUND	BALLISTIC FACTORS
15000-21000	-.0104
21000-26000	-.0078
26000-32647	-.0057
32647-34000	.0413
34000-36000	.0315
36000-41000	.0343
41000-46000	.0186
46000-51000	.0055
51000-56000	.0035
56000-61000	.0084
61000-66000	.0019
66000-73497	.0009

TABLE II. BALLISTIC FACTORS
NIKE-HYDAC STV (SR-040)

AERO-VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1 0600 MST		2 0630 MST		3 0700 MST		4 0720 MST			
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	6.0N	0.0	7.0N	2.0E	8.0N	1.0E	14.0N	3.0E		
2	8.0	0.0	10.0	2.0	9.0	1.0	15.0	5.0		
3	9.0	0.0	11.0	1.0	9.5	1.5	15.0	5.0		
4	10.0	0.0	12.0	0.0	10.0	2.0	15.0	5.0		
5	12.0	0.0	13.0	0.0	14.0	0.0	18.0	2.0		

AERO-VANE NO. *	MEAN WIND COMPONENTS IN MILES PER HOUR									
	5 0735 MST		6 0742 MST		7 0750 MST		8 0802 MST			
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
1	10.0N	3.0E	10.0N	1.0E	12.0N	2.0E	12.0N	3.0E		
2	12.0	4.0	12.0	1.0	14.0	3.0	14.0	2.0		
3	12.5	4.0	12.5	1.5	13.0	3.0	15.0	3.0		
4	13.0	4.0	13.0	2.0	12.0	3.0	17.0	4.0		
5	14.0	2.0	12.0	2.0	13.0	2.0	17.0	1.0		

TABLE III. ANEMOMETER WIND SPEED AND DIRECTION
NIKE-HYDAC STV (SR-910)

* Heights corresponding to Aerovane Numbers: 1 = 35 Feet 3 = 128 Feet 5 = 800 Feet
2 = 88 Feet 4 = 168 Feet

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	1 0600 MST		2 0630 MST		3 0700 MST		4 0720 MST		MST	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216- 300	13.0N	0.5W	16.0N	0.0	14.5N	0.0	18.0N	1.0E		
300- 400	16.0	2.0	17.0	0.5E	17.0	0.0	18.0	1.0		
400- 600	18.0	1.0	20.0	1.0	19.0	0.5E	18.5	1.0		
600- 800	21.5	0.5E	23.0	1.0	20.0	1.5	20.0	1.5		
800-1000	23.0	1.0	22.0	1.0	19.0	2.0	20.0	1.5		
1000-1400	21.0	1.0	20.0	0.5	16.0	1.0	19.0	1.0		
1400-2000	19.5	1.5	15.0	1.5	15.0	2.0	16.5	2.5		
2000-2500	16.5	5.5	11.0	4.6	11.0	4.0	10.0	2.5		
2500-3000	13.0	8.0	6.0	6.5	2.0	5.0	7.0	3.5		
3000-3500	6.5	8.0	3.0	9.0	0.0	5.5	3.0	5.0		
3500-4000	0.0	7.0	0.0S	10.5	6.5S	10.0	1.5S	10.0		

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA
NIKE-HYDAC STV (SR-040)

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN MILES PER HOUR									
	5 0735 MST		6 0742 MST		7 0750 MST		8 0802 MST		MST	
	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W
216- 300	15.0N	2.5E	13.0N	0.0	15.5N	2.0E	13.5N	1.5E		
300- 400	17.5	3.0	18.0	3.0E	18.0	2.5	19.5	2.0		
400- 600	20.0	3.0	20.5	4.0	20.5	3.0	21.5	3.0		
600- 800	21.5	2.5	23.5	3.0	22.0	2.5	22.0	3.5		
800-1000	21.5	2.0	23.5	2.0	21.0	3.0	22.0	3.5		
1000-1400	19.0	1.0	21.5	2.0	18.0	3.0	21.0	2.0		
1400-2000	17.0	1.5	16.5	3.0	15.0	3.0	18.0	4.0		
2000-2500	13.5	3.0	8.0	5.5	11.0	4.5	12.0	4.5		
2500-3000	5.0	5.0	4.5	7.0	8.0	5.0	11.0	5.5		
3000-3500	2.0	7.0	2.5S	6.0	3.5	5.5	5.0	7.5		
3500-4000	1.0S	10.5	7.0	7.0	3.0S	7.0	0.5S	8.5		

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA (Cont)
NIKE-HYDAC STV (SR-040)

LAYERS IN FEET ABOVE GROUND	MEAN WIND COMPONENTS IN KNOTS					
	1 0500 MST		2 0800 MST			
	N-S	E-W	N-S	E-W	N-S	E-W
4000- 4263	1.5S	10.5E	4.5S	8.0E		
4263- 9000	15.0	5.5	12.0	7.0		
9000-15000	30.5	5.5W	30.5	5.5W		
15000-21000	40.0	23.0	39.0	22.5		
21000-26000	57.0	33.0	58.0	28.0		
26000-32647	68.0	39.0	54.0	31.0		
32647-34000	68.0	57.0	55.0	46.0		
34000-36000	67.0	56.0	57.0	48.0		
36000-41000	63.0	53.0	47.0	39.0		
41000-46000	47.0	39.0	41.5	34.5		
46000-51000	36.5	31.0	36.0	30.0		
51000-56000	9.5	26.0	33.5	28.0		
56000-61000	8.0N	4.5	29.5	17.0		
61000-66000	7.5S	13.0	20.5	7.5		
66000-73497	5.5	9.5	8.5	7.0		

TABLE V. RAWINSONDE-MEASURED WIND DATA
NIKE-HYDAC STV (SR-040)

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI

WSTN SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	877.0	12.0	8.7	80.0	1066.4	659.1	360.0	2.9	1.000290
4000.0	876.7	12.1	8.7	79.6	1065.7	659.2	0.1	3.0	1.000290
4500.0	861.0	15.0	8.3	64.0	1036.0	662.6	5.3	4.6	1.000281
5000.0	845.7	16.6	8.9	59.9	1011.7	664.5	10.6	6.3	1.000277
5500.0	830.6	15.9	8.0	59.5	996.5	663.6	15.8	8.0	1.000271
6000.0	815.8	15.1	7.2	59.1	981.6	662.6	21.0	9.7	1.000265
6500.0	801.3	14.3	6.4	58.7	966.9	661.7	34.7	9.4	1.000259
7000.0	787.0	13.5	5.6	58.4	952.4	660.7	53.9	7.7	1.000254
7500.0	773.0	12.7	4.7	58.2	938.3	659.7	80.8	8.3	1.000249
8000.0	759.1	11.1	3.7	60.4	926.8	657.8	108.2	9.4	1.000244
8500.0	745.3	10.1	3.2	62.3	913.2	656.6	122.7	11.0	1.000240
9000.0	731.7	9.1	2.7	64.2	899.8	655.4	136.0	12.4	1.000236
9500.0	718.4	8.1	2.1	66.0	886.7	654.2	146.7	13.4	1.000232
10000.0	705.3	7.1	1.6	67.9	873.8	653.0	158.6	14.4	1.000228
10500.0	692.4	5.9	2.0	76.0	861.3	651.7	171.5	15.5	1.000226
11000.0	679.7	4.5	3.3	92.1	849.3	650.2	179.3	16.6	1.000227
11500.0	667.1	3.8	3.1	94.9	835.5	649.5	185.7	17.7	1.000224
12000.0	654.8	3.2	2.9	97.7	821.9	648.7	188.9	19.6	1.000220
12500.0	642.6	2.1	1.7	97.1	810.0	647.3	191.0	21.2	1.000215
13000.0	630.5	0.6	-0.3	93.4	799.6	645.4	191.6	22.3	1.000208
13500.0	618.7	-0.9	-2.4	89.7	789.2	643.5	191.4	23.9	1.000202
14000.0	607.1	-2.3	-4.5	85.1	778.9	641.6	191.0	25.7	1.000196
14500.0	595.5	-3.7	-7.1	77.4	768.2	639.9	190.9	27.3	1.000190
15000.0	584.2	-4.8	-10.5	64.8	757.1	638.4	191.3	29.0	1.000183
15500.0	573.0	-5.0	-17.7	36.4	743.6	638.0	193.8	31.0	1.000174
16000.0	562.0	-5.5	-18.9	34.3	731.0	637.3	196.6	33.1	1.000170
16500.0	551.2	-6.1	-20.1	32.2	718.6	636.5	199.5	35.4	1.000167
17000.0	540.5	-7.1	-21.2	31.5	707.2	635.4	202.2	37.2	1.000164
17500.0	530.0	-8.1	-22.3	31.0	696.1	634.2	204.8	38.4	1.000161
18000.0	519.6	-9.1	-23.4	30.4	685.2	632.9	207.0	39.2	1.000158

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
18500.0	509.5	-10.1	-24.5	29.9	674.5	631.7	209.0	39.9	1.000155
19000.0	499.6	-11.1	-25.6	29.4	663.9	630.5	210.1	40.2	1.000152
19500.0	489.9	-11.9	-26.6	28.6	653.0	629.5	210.8	40.4	1.000149
20000.0	480.2	-12.2	-27.3	27.4	640.9	629.1	211.0	40.9	1.000146
20500.0	470.8	-12.5	-28.1	26.2	629.1	628.7	211.0	41.5	1.000144
21000.0	461.5	-13.5	-28.6	26.9	618.9	627.6	209.8	42.3	1.000141
21500.0	452.3	-14.6	-29.2	28.0	609.2	626.3	208.8	43.1	1.000139
22000.0	443.3	-15.7	-30.0	28.5	599.8	624.8	209.1	44.1	1.000136
22500.0	434.5	-16.9	-30.9	29.0	590.6	623.4	209.4	45.1	1.000134
23000.0	425.6	-18.1	-31.8	29.1	581.1	622.0	209.4	46.4	1.000132
23500.0	416.9	-19.2	-32.8	29.3	571.8	620.6	209.6	47.8	1.000130
24000.0	408.4	-20.3	-33.7	29.4	562.7	619.2	210.5	49.6	1.000127
24500.0	400.1	-21.5	-34.7	29.5	553.7	617.8	211.1	51.4	1.000125
25000.0	391.9	-22.6	-35.7	29.7	544.9	616.4	211.1	53.0	1.000123
25500.0	384.0	-23.8	-36.6	29.8	536.3	615.0	210.3	55.5	1.000121
26000.0	376.1	-24.9	-37.6	29.9	527.7	613.6	208.8	58.8	1.000119
26500.0	368.4	-25.5	-38.1	30.0	518.2	612.8	206.8	62.0	1.000117
27000.0	360.8	-25.5	-38.1	30.0	507.4	612.8	204.6	65.1	1.000114
27500.0	353.2	-26.5	-38.9	30.1	498.7	611.6	203.3	67.8	1.000112
28000.0	345.7	-27.5	-39.9	30.3	490.4	610.3	202.1	70.5	1.000110
28500.0	338.5	-28.6	-40.8	30.4	482.1	609.0	202.8	71.7	1.000108
29000.0	331.3	-29.7	-41.7	30.5	474.1	607.6	203.5	72.5	1.000107
29500.0	324.4	-30.8	-42.6	30.7	466.2	606.3	204.1	70.8	1.000105
30000.0	317.5	-31.8	-43.5	30.8	458.4	604.9	204.7	69.8	1.000103
30500.0	310.9	-32.9	-44.4	31.0	450.7	603.6	205.4	69.9	1.000101
31000.0	304.2	-33.6	-45.1	30.9	442.4	602.7	206.3	69.4	1.000099
31500.0	297.7	-34.2	-45.7	30.7	434.0	601.9	207.3	68.2	1.000097
32000.0	291.3	-34.8	-46.3	30.5	425.7	601.2	208.7	69.5	1.000095
32500.0	285.0	-35.3	-46.8	30.3	417.5	600.5	210.3	71.7	1.000094
33000.0	278.9	-35.9	-47.4	30.1	409.5	599.8	211.3	75.4	1.000092

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTN SITE COORDINATES
E 488,580 FEET
N 105,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
33500.0	272.8	-36.8	-48.2	30.0	402.2	598.6	212.2	79.4	1.000090
34000.0	266.9	-38.0	-49.3	30.0	395.4	597.1	213.3	81.4	1.000089
34500.0	261.1	-39.1	-51.3	26.5**	388.6	595.7	214.3	83.2	1.000087
35000.0	255.3	-40.0	-54.7	19.4**	381.6	594.5	215.9	84.0	1.000085
35500.0	249.7	-41.0	-59.1	12.4**	374.7	593.3	217.3	84.8	1.000084
36000.0	244.2	-42.0	-66.1	5.4**	368.0	592.1	218.7	85.5	1.000082
36500.0	238.7	-43.0	0.	-0. **	361.4	590.7	219.5	87.3	1.000080
37000.0	233.3	-44.3	0.	-0. **	355.2	589.0	219.7	90.0	1.000079
37500.0	227.9	-45.7	0.	-0. **	349.1	587.3	219.6	92.1	1.000078
38000.0	222.7	-47.0	0.	-0. **	343.2	585.5	219.4	94.0	1.000076
38500.0	217.7	-48.3	0.	-0. **	337.3	583.8	219.5	92.9	1.000075
39000.0	212.7	-49.7	0.	-0. **	331.6	582.1	219.6	91.3	1.000074
39500.0	207.8	-51.0	0.	-0. **	326.0	580.3	219.9	90.1	1.000073
40000.0	203.1	-52.4	0.	-0. **	320.5	578.6	220.2	88.8	1.000071
40500.0	198.4	-53.7	0.	-0. **	315.0	576.8	220.9	87.1	1.000070
41000.0	193.9	-55.0	0.	-0. **	309.7	575.1	221.6	85.3	1.000069
41500.0	189.3	-56.1	0.	-0. **	303.9	573.6	222.1	83.1	1.000068
42000.0	184.8	-57.3	0.	-0. **	298.2	572.1	222.6	81.0	1.000066
42500.0	180.4	-58.4	0.	-0. **	292.6	570.6	222.4	79.1	1.000065
43000.0	176.1	-59.5	0.	-0. **	287.1	569.1	222.2	77.3	1.000064
43500.0	171.9	-60.6	0.	-0. **	281.8	567.6	222.4	75.6	1.000063
44000.0	167.8	-61.7	0.	-0. **	276.5	566.2	222.6	73.7	1.000062
44500.0	163.7	-61.9	0.	-0. **	270.0	565.0	223.5	71.5	1.000060
45000.0	159.7	-62.0	0.	-0. **	263.6	565.0	224.5	68.6	1.000059
45500.0	155.9	-62.2	0.	-0. **	257.5	565.5	225.5	65.5	1.000057
46000.0	152.1	-63.0	0.	-0. **	252.1	564.5	225.2	62.6	1.000056
46500.0	148.4	-63.8	0.	-0. **	246.9	563.4	224.7	59.8	1.000055
47000.0	144.7	-64.5	0.	-0. **	241.7	562.4	223.5	57.8	1.000054
47500.0	141.2	-64.8	0.	-0. **	236.1	562.0	222.4	55.7	1.000053
48000.0	137.7	-65.0	0.	-0. **	230.5	561.8	222.0	54.2	1.000051

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
48500.0	134.3	-65.1	0.	-0. **	225.0	561.6	221.6	52.7	1.000050
49000.0	131.0	-65.3	0.	-0. **	219.6	561.4	221.9	51.8	1.000049
49500.0	127.8	-65.4	0.	-0. **	214.4	561.2	222.1	50.9	1.000048
50000.0	124.7	-65.6	0.	-0. **	209.2	561.0	221.4	50.5	1.000047
50500.0	121.6	-65.9	0.	-0. **	204.4	560.6	220.6	50.0	1.000046
51000.0	118.5	-66.3	0.	-0. **	199.7	560.0	219.0	49.6	1.000044
51500.0	115.6	-66.7	0.	-0. **	195.1	559.5	217.5	49.2	1.000043
52000.0	112.7	-67.1	0.	-0. **	190.6	559.0	216.1	49.0	1.000042
52500.0	109.9	-67.5	0.	-0. **	186.2	558.5	214.9	49.1	1.000041
53000.0	107.2	-67.8	0.	-0. **	181.9	557.9	214.1	49.6	1.000041
53500.0	104.5	-68.2	0.	-0. **	177.7	557.4	214.0	48.8	1.000040
54000.0	101.9	-68.6	0.	-0. **	173.6	556.9	214.4	47.0	1.000039
54500.0	99.4	-69.0	0.	-0. **	169.6	556.3	216.1	43.8	1.000038
55000.0	96.9	-69.4	0.	-0. **	165.7	555.8	218.8	39.8	1.000037
55500.0	94.5	-69.7	0.	-0. **	161.8	555.4	223.5	34.7	1.000036
56000.0	92.1	-69.6	0.	-0. **	157.7	555.5	230.3	28.6	1.000035
56500.0	89.8	-69.6	0.	-0. **	153.7	555.6	238.6	23.3	1.000034
57000.0	87.6	-69.5	0.	-0. **	149.8	555.6	249.4	19.4	1.000033
57500.0	85.4	-69.5	0.	-0. **	146.0	555.7	258.1	16.3	1.000033
58000.0	83.2	-69.4	0.	-0. **	142.3	555.8	261.1	14.7	1.000032
58500.0	81.1	-68.3	0.	-0. **	138.0	557.3	261.1	13.4	1.000031
59000.0	79.1	-65.8	0.	-0. **	133.0	560.7	254.0	12.8	1.000030
59500.0	77.2	-63.2	0.	-0. **	128.1	564.1	247.0	12.4	1.000029
60000.0	75.3	-63.0	0.	-0. **	124.9	564.4	240.3	12.2	1.000028
60500.0	73.5	-63.1	0.	-0. **	121.9	564.4	238.2	10.6	1.000027
61000.0	71.7	-63.1	0.	-0. **	118.9	564.3	243.3	7.0	1.000026
61500.0	69.9	-63.1	0.	-0. **	116.0	564.3	269.0	4.3	1.000026
62000.0	68.2	-63.2	0.	-0. **	113.2	564.2	322.2	2.9	1.000025
62500.0	66.6	-63.2	0.	-0. **	110.5	564.2	359.8	2.7	1.000025
63000.0	65.0	-63.3	0.	-0. **	107.8	564.1	18.7	4.1	1.000024

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTN SITE COORDINATES
E 488,380 FEET
N 185,043 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.4	-63.3	0.	-0. **	105.2	564.1	29.2	4.5	1.000023
64000.0	61.8	-63.3	0.	-0. **	102.7	564.0	30.8	3.9	1.000023
64500.0	60.3	-63.4	0.	-0. **	100.2	564.0	31.9	3.3	1.000022
65000.0	58.9	-63.3	0.	-0. **	97.8	564.0	32.5	2.6	1.000022
65500.0	57.5	-62.7	0.	-0. **	95.1	564.8	345.2	1.8	1.000021
66000.0	56.1	-62.1	0.	-0. **	92.6	565.6	256.6	0.9	1.000021
66500.0	54.7	-62.5	0.	-0. **	90.1	566.5	215.8	0.9	1.000020
67000.0	53.4	-60.9	0.	-0. **	87.7	567.3	214.7	1.8	1.000020
67500.0	52.2	-60.3	0.	-0. **	85.4	568.1	214.2	5.3	1.000019
68000.0	50.9	-59.7	0.	-0. **	83.1	568.9	214.1	10.8	1.000018
68500.0	49.7	-59.1	0.	-0. **	80.9	569.7	214.1	13.4	1.000018
69000.0	48.5	-58.5	0.	-0. **	78.7	570.5	214.1	14.0	1.000018
69500.0	47.3	-57.8	0.	-0. **	76.6	571.3	219.0	13.5	1.000017
70000.0	46.2	-57.2	0.	-0. **	74.6	572.2	227.2	12.3	1.000017
70500.0	45.1	-56.6	0.	-0. **	72.6	573.0	237.3	10.6	1.000016
71000.0	44.0	-56.0	0.	-0. **	70.6	573.8	248.6	8.7	1.000016
71500.0	43.0	-55.9	0.	-0. **	68.9	573.9	272.3	8.2	1.000015
72000.0	42.0	-55.8	0.	-0. **	67.3	574.1	303.4	8.6	1.000015
72500.0	41.0	-55.7	0.	-0. **	65.7	574.2	318.2	8.9	1.000015
73000.0	40.0	-55.6	0.	-0. **	64.1	574.3	294.2	9.2	1.000014
73500.0	39.1	-55.5	0.	-0. **	62.6	574.5	270.1	9.4	1.000014
74000.0	38.2	-55.4	0.	-0. **	61.1	574.6	253.4	11.0	1.000014
74500.0	37.3	-55.3	0.	-0. **	59.6	574.7	244.1	13.8	1.000013
75000.0	36.4	-55.2	0.	-0. **	58.2	574.9	234.8	16.7	1.000013
75500.0	35.6	-55.1	0.	-0. **	56.8	575.0	229.7	17.9	1.000013
76000.0	34.7	-55.0	0.	-0. **	55.5	575.1	227.9	17.9	1.000012
76500.0	33.9	-54.9	0.	-0. **	54.1	575.3	226.0	17.9	1.000012
77000.0	33.1	-54.8	0.	-0. **	52.8	575.4	224.4	17.4	1.000012
77500.0	32.3	-54.7	0.	-0. **	51.6	575.5	222.9	16.5	1.000011
78000.0	31.6	-54.6	0.	-0. **	50.4	575.7	221.4	15.6	1.000011

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3969.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTH SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
78500.0	30.8	-54.3	0.	-0. **	49.1	576.0	221.1	15.1	1.000011
79000.0	30.1	-53.5	0.	-0. **	47.8	577.1	221.3	14.8	1.000011
79500.0	29.4	-52.7	0.	-0. **	46.5	578.1	221.5	14.5	1.000010
80000.0	28.8	-52.1	0.	-0. **	45.3	578.9	219.8	17.6	1.000010
80500.0	28.1	-52.0	0.	-0. **	44.3	579.1	217.6	21.8	1.000010
81000.0	27.4	-51.8	0.	-0. **	43.2	579.3	215.3	26.1	1.000010
81500.0	26.8	-51.6	0.	-0. **	42.2	579.6	214.8	28.9	1.000009
82000.0	26.2	-51.4	0.	-0. **	41.2	579.8	214.8	31.2	1.000009
82500.0	25.6	-51.2	0.	-0. **	40.2	580.1	214.8	33.6	1.000009
83000.0	25.0	-51.0	0.	-0. **	39.2	580.3	214.8	24.8	1.000009
83500.0	24.4	-50.9	0.	-0. **	38.3	580.5	214.8	14.5	1.000009
84000.0	23.9	-50.7	0.	-0. **	37.4	580.8	206.4	5.6	1.000008
84500.0	23.3	-50.5	0.	-0. **	36.5	581.0	140.1	6.6	1.000008
85000.0	22.8	-50.3	0.	-0. **	35.7	581.2	73.9	7.6	1.000008
85500.0	22.3	-50.1	0.	-0. **	34.8	581.5	34.8	9.3	1.000008
86000.0	21.8	-50.0	0.	-0. **	34.0	581.7	34.8	11.9	1.000008
86500.0	21.3	-49.8	0.	-0. **	33.2	581.9	34.8	14.5	1.000007
87000.0	20.8	-49.6	0.	-0. **	32.4	582.2	349.0	13.1	1.000007
87500.0	20.3	-49.4	0.	-0. **	31.6	582.4	282.7	9.8	1.000007
88000.0	19.8	-49.2	0.	-0. **	30.9	582.7	216.5	6.6	1.000007
88500.0	19.4	-49.1	0.	-0. **	30.1	582.9	214.8	8.1	1.000007
89000.0	18.9	-48.9	0.	-0. **	29.4	583.1	214.8	9.8	1.000007
89500.0	18.5	-48.8	0.	-0. **	28.8	583.2	230.9	10.8	1.000006
90000.0	18.1	-48.8	0.	-0. **	28.1	583.3	296.4	9.8	1.000006
90500.0	17.7	-48.7	0.	-0. **	27.4	583.4	2.0	8.7	1.000006
91000.0	17.3	-48.6	0.	-0. **	26.8	583.5	34.8	7.6	1.000006
91500.0	16.9	-48.6	0.	-0. **	26.2	583.5	34.8	6.5	1.000006
92000.0	16.5	-48.5	0.	-0. **	25.6	583.6	34.8	5.3	1.000006
92500.0	16.1	-48.4	0.	-0. **	25.0	583.7	34.8	4.8	1.000006
93000.0	15.8	-48.4	0.	-0. **	24.4	583.8	34.8	4.6	1.000005

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0500 HRS MST
ASCENSION NO. 763

UPPER AIR DATA
0083003902
WHITE SANDS SITE
TABLE VI (Cont)

WSTH SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
93500.0	15.4	-48.3	0.	-0. **	23.9	583.9	34.4	4.4	1.000005
94000.0	15.1	-48.2	0.	-0. **	23.3	584.0	328.8	5.0	1.000005
94500.0	14.7	-48.2	0.	-0. **	22.8	584.1	263.3	5.7	1.000005
95000.0	14.4	-48.1	0.	-0. **	22.3	584.1	199.6	6.5	1.000005
95500.0	14.1	-48.0	0.	-0. **	21.8	584.2	140.9	7.5	1.000005
96000.0	13.7	-48.0	0.	-0. **	21.3	584.3	82.3	8.6	1.000005
96500.0	13.4	-47.9	0.	-0. **	20.8	584.4	63.8	8.0	1.000005
97000.0	13.1	-47.8	0.	-0. **	20.3	584.5	75.9	6.2	1.000005
97500.0	12.8	-47.4	0.	-0. **	19.8	585.0	88.0	4.3	1.000004
98000.0	12.5	-46.8	0.	-0. **	19.3	585.8	76.6	5.9	1.000004
98500.0	12.3	-46.2	0.	-0. **	18.8	586.5	65.0	7.5	1.000004
99000.0	12.0	-45.6	0.	-0. **	18.4	587.3	54.4	8.2	1.000004
99500.0	11.7	-45.0	0.	-0. **	17.9	588.1	44.7	8.1	1.000004
100000.0	11.5	-44.4	0.	-0. **	17.5	588.9	35.1	8.0	1.000004
100500.0	11.2	-43.8	0.	-0. **	17.0	589.6	34.6	10.1	1.000004
101000.0	11.0	-43.2	0.	-0. **	16.6	590.4	34.6	12.4	1.000004
101500.0	10.7	-42.6	0.	-0. **	16.2	591.2			1.000004
102000.0	10.5	-42.0	0.	-0. **	15.8	591.9			1.000004
102500.0	10.2	-41.4	0.	-0. **	15.4	592.7			1.000003
103000.0	10.0	-40.8	0.	-0. **	15.0	593.5			1.000003
103500.0	9.8	-41.7	0.	-0. **	14.7	592.3			1.000003

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 704

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	878.5	17.7	8.1	53.0	1047.5	665.6	30.0	9.9	1.000282
4000.0	878.2	17.7	8.0	52.9	1047.2	665.6	30.0	9.9	1.000281
4500.0	862.6	16.9	6.0	48.6	1032.1	664.5	29.6	10.0	1.000272
5000.0	847.4	17.0	5.9	47.6	1013.3	664.6	29.1	10.0	1.000267
5500.0	832.3	16.8	5.5	47.1	996.3	664.3	28.7	10.0	1.000263
6000.0	817.5	15.8	4.7	47.4	981.7	663.2	28.2	10.1	1.000257
6500.0	803.0	14.9	4.0	47.6	967.4	662.2	42.6	9.2	1.000253
7000.0	788.7	14.0	3.2	47.9	953.4	661.1	70.5	7.4	1.000248
7500.0	774.6	13.0	2.5	48.6	939.7	659.9	98.1	7.9	1.000243
8000.0	760.6	12.0	1.8	49.9	926.3	658.6	125.5	9.3	1.000239
8500.0	746.9	10.9	1.2	51.1	913.1	657.3	138.7	10.9	1.000235
9000.0	733.4	9.8	0.5	52.3	900.1	656.0	149.5	12.6	1.000231
9500.0	720.1	8.1	2.5	67.7	888.6	654.3	154.5	13.3	1.000233
10000.0	706.9	6.8	1.3	68.0	876.8	652.6	159.3	14.0	1.000228
10500.0	694.0	5.4	-0.0	68.0	865.2	650.9	162.4	14.1	1.000223
11000.0	681.2	4.7	1.8	81.4	851.0	650.3	165.7	14.2	1.000224
11500.0	668.5	3.8	2.0	88.1	837.8	649.3	170.8	14.5	1.000222
12000.0	656.1	2.5	-0.1	82.6	826.2	647.7	175.8	14.7	1.000214
12500.0	643.8	1.3	-2.2	77.1	814.8	646.1	180.1	16.3	1.000208
13000.0	631.8	0.1	-4.4	71.6	803.5	644.5	184.0	18.1	1.000201
13500.0	619.9	-1.0	-6.2	68.3	791.9	643.1	185.4	20.9	1.000196
14000.0	608.2	-2.0	-6.9	69.3	779.8	641.8	186.1	23.9	1.000192
14500.0	596.6	-3.1	-7.7	70.2	768.0	640.6	185.9	27.1	1.000189
15000.0	585.3	-4.1	-8.5	71.2	756.3	639.4	188.2	29.7	1.000185
15500.0	574.2	-5.2	-9.6	71.5	745.3	637.9	192.4	31.7	1.000182
16000.0	563.1	-7.4	-15.2	54.0	737.3	635.2	196.5	33.4	1.000174
16500.0	552.2	-6.3	-23.2	24.9	720.5	636.3	200.7	35.0	1.000166
17000.0	541.5	-7.0	-24.1	24.4	708.4	635.4	204.4	36.3	1.000162
17500.0	530.9	-7.8	-24.9	23.9	696.6	634.5	207.5	37.5	1.000160
18000.0	520.6	-8.5	-25.8	23.5	684.9	633.6	207.9	38.3	1.000157

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

MSTH SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
18500.0	510.4	-9.2	-26.6	23.0	673.5	652.7	208.1	39.2	1.000154
19000.0	500.5	-10.0	-27.5	22.5	662.2	631.9	208.1	40.2	1.000151
19500.0	490.8	-10.7	-28.3	22.0	651.2	631.0	208.1	41.1	1.000148
20000.0	481.2	-11.4	-29.2	21.6	640.3	630.1	208.1	41.9	1.000146
20500.0	471.8	-12.2	-30.1	21.1	629.6	629.2	208.0	42.7	1.000143
21000.0	462.4	-13.2	-30.9	21.2	619.4	628.0	207.9	43.5	1.000141
21500.0	453.1	-14.2	-31.7	21.4	609.5	626.7	208.2	43.7	1.000138
22000.0	444.0	-15.3	-32.5	21.6	599.8	625.4	208.7	43.6	1.000136
22500.0	435.1	-16.4	-33.3	21.8	590.2	624.0	209.6	44.2	1.000134
23000.0	426.4	-17.5	-34.1	22.0	580.8	622.7	210.6	45.0	1.000131
23500.0	417.8	-18.5	-35.0	22.2	571.5	621.4	211.2	46.4	1.000129
24000.0	409.4	-19.6	-35.8	22.5	562.4	620.1	211.8	48.0	1.000127
24500.0	401.2	-20.7	-36.6	22.7	553.5	618.8	210.8	50.6	1.000125
25000.0	393.1	-21.7	-37.5	22.9	544.7	617.5	209.4	53.5	1.000123
25500.0	385.2	-22.6	-38.2	23.0	535.5	616.4	207.3	57.0	1.000121
26000.0	377.2	-23.2	-38.7	23.0	525.8	615.6	205.0	60.7	1.000118
26500.0	369.5	-23.9	-39.3	23.0	516.3	614.8	203.1	63.7	1.000116
27000.0	361.9	-24.5	-39.8	23.0	507.0	614.0	201.6	66.2	1.000114
27500.0	354.4	-25.2	-40.4	23.0	497.9	613.2	200.7	68.3	1.000112
28000.0	347.0	-26.2	-41.3	23.0	489.5	612.0	200.3	70.2	1.000110
28500.0	339.7	-27.2	-42.2	23.0	481.2	610.7	200.1	70.3	1.000108
29000.0	332.6	-28.2	-43.1	23.0	473.1	609.4	200.1	68.4	1.000106
29500.0	325.7	-29.3	-43.9	23.0	465.1	608.1	200.2	66.4	1.000104
30000.0	318.8	-30.3	-44.8	23.0	457.3	606.9	200.7	64.4	1.000103
30500.0	312.1	-30.1	-44.7	23.0	447.4	607.1	201.3	63.3	1.000100
31000.0	305.5	-30.6	-45.1	23.0	438.8	606.4	202.6	67.7	1.000098
31500.0	299.0	-31.9	-46.2	23.0	431.6	604.9	204.1	71.4	1.000097
32000.0	292.6	-33.1	-47.3	23.0	424.6	603.3	206.9	67.3	1.000095
32500.0	286.3	-34.3	-48.3	23.0	417.6	601.8	209.7	63.4	1.000094
33000.0	280.2	-35.5	-49.4	23.0	410.8	600.2	212.3	61.3	1.000092

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
33500.0	274.2	-36.7	-50.9	21.8**	403.9	598.8	215.2	58.2	1.000090
34000.0	268.2	-37.6	-53.5	17.6**	396.7	597.6	219.4	50.9	1.000089
34500.0	262.3	-38.5	-56.4	13.5**	389.5	596.4	221.6	48.3	1.000087
35000.0	256.5	-39.5	-60.1	9.4**	382.5	595.2	221.2	51.6	1.000085
35500.0	250.9	-40.4	-65.2	5.2**	375.7	594.0	221.1	59.1	1.000084
36000.0	245.4	-41.4	-76.5	1.1**	368.9	592.8	221.0	67.8	1.000082
36500.0	239.9	-42.5	0.	-0. **	362.4	591.3	221.2	70.4	1.000081
37000.0	234.4	-43.7	0.	-0. **	356.0	589.8	221.5	72.5	1.000079
37500.0	229.0	-45.0	0.	-0. **	349.7	588.2	221.6	73.6	1.000078
38000.0	223.8	-46.2	0.	-0. **	343.6	586.6	221.6	74.0	1.000077
38500.0	218.7	-47.5	0.	-0. **	337.6	585.0	221.6	74.1	1.000075
39000.0	213.7	-48.7	0.	-0. **	331.7	583.4	221.5	70.3	1.000074
39500.0	208.8	-49.9	0.	-0. **	325.9	581.7	221.4	66.4	1.000073
40000.0	204.0	-51.2	0.	-0. **	320.2	580.1	221.1	63.6	1.000071
40500.0	199.3	-52.4	0.	-0. **	314.6	578.5	220.9	61.1	1.000070
41000.0	194.8	-53.7	0.	-0. **	309.2	576.9	220.3	60.0	1.000069
41500.0	190.3	-54.9	0.	-0. **	303.8	575.3	219.8	59.2	1.000068
42000.0	186.0	-56.1	0.	-0. **	298.6	573.6	219.3	61.0	1.000066
42500.0	181.6	-57.4	0.	-0. **	293.3	572.0	218.9	63.7	1.000065
43000.0	177.3	-58.6	0.	-0. **	288.0	570.3	219.5	64.2	1.000064
43500.0	173.0	-59.5	0.	-0. **	282.2	569.1	220.4	63.6	1.000063
44000.0	168.8	-60.0	0.	-0. **	276.0	568.4	221.2	64.1	1.000061
44500.0	164.7	-60.5	0.	-0. **	269.9	567.8	221.9	65.0	1.000060
45000.0	160.7	-61.1	0.	-0. **	264.0	567.1	222.2	61.7	1.000059
45500.0	156.3	-61.6	0.	-0. **	258.1	566.4	222.4	56.2	1.000057
46000.0	152.9	-62.1	0.	-0. **	252.5	565.7	221.9	53.5	1.000056
46500.0	149.2	-62.6	0.	-0. **	246.9	565.0	220.8	52.7	1.000055
47000.0	145.6	-63.1	0.	-0. **	241.5	564.4	219.3	51.6	1.000054
47500.0	142.0	-63.6	0.	-0. **	236.1	563.7	217.5	50.1	1.000053
48000.0	138.6	-64.1	0.	-0. **	220.9	563.0	216.2	49.4	1.000051

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE HAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

MSTH SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
48500.0	135.2	-64.6	0.	-0. **	225.8	562.3	215.7	49.8	1.000050
49000.0	131.9	-65.1	0.	-0. **	220.9	561.6	215.2	50.2	1.000049
49500.0	128.7	-65.6	0.	-0. **	216.0	560.9	214.6	50.4	1.000048
50000.0	125.5	-66.1	0.	-0. **	211.3	560.2	214.1	50.6	1.000047
50500.0	122.5	-66.6	0.	-0. **	206.6	559.6	213.6	50.4	1.000046
51000.0	119.5	-67.1	0.	-0. **	202.1	558.9	213.1	50.2	1.000045
51500.0	116.5	-67.5	0.	-0. **	197.5	558.3	212.5	49.5	1.000044
52000.0	113.6	-67.8	0.	-0. **	192.8	558.0	212.0	48.9	1.000043
52500.0	110.8	-68.1	0.	-0. **	188.3	557.6	212.0	47.9	1.000042
53000.0	108.0	-68.4	0.	-0. **	183.8	557.2	212.1	46.9	1.000041
53500.0	105.3	-68.7	0.	-0. **	179.5	556.8	214.4	46.6	1.000040
54000.0	102.7	-68.1	0.	-0. **	174.0	557.5	217.3	46.6	1.000039
54500.0	100.2	-67.5	0.	-0. **	169.7	558.4	220.7	46.6	1.000038
55000.0	97.7	-66.9	0.	-0. **	165.0	559.2	224.5	46.8	1.000037
55500.0	95.3	-66.2	0.	-0. **	160.4	560.1	227.2	46.8	1.000036
56000.0	92.9	-66.5	0.	-0. **	156.6	559.8	228.3	46.7	1.000035
56500.0	90.6	-67.7	0.	-0. **	153.6	558.2	228.7	46.4	1.000034
57000.0	88.4	-68.2	0.	-0. **	150.2	557.4	226.9	45.3	1.000033
57500.0	86.2	-67.3	0.	-0. **	145.8	558.7	224.9	44.3	1.000032
58000.0	84.1	-66.3	0.	-0. **	141.6	560.0	221.0	43.8	1.000032
58500.0	82.0	-65.3	0.	-0. **	137.5	561.3	217.1	43.2	1.000031
59000.0	80.0	-64.4	0.	-0. **	133.4	562.6	215.5	43.5	1.000030
59500.0	78.0	-63.4	0.	-0. **	129.6	563.9	213.8	43.7	1.000029
60000.0	76.1	-62.9	0.	-0. **	126.1	564.7	212.9	44.6	1.000028
60500.0	74.2	-62.8	0.	-0. **	123.0	564.8	212.1	45.4	1.000027
61000.0	72.4	-62.7	0.	-0. **	119.9	564.9	211.9	45.6	1.000027
61500.0	70.7	-62.6	0.	-0. **	117.0	565.0	211.9	45.6	1.000026
62000.0	69.0	-62.5	0.	-0. **	114.1	565.1	211.9	41.5	1.000025
62500.0	67.3	-62.4	0.	-0. **	111.3	565.2	211.9	33.5	1.000025
63000.0	65.7	-62.3	0.	-0. **	108.5	565.4	211.9	27.4	1.000024

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	64.1	-61.9	0.	-0. **	105.7	566.0	211.9	26.1	1.000024
64000.0	62.6	-61.2	0.	-0. **	102.8	566.9	211.9	24.7	1.000023
64500.0	61.1	-60.4	0.	-0. **	100.0	567.9	211.9	24.5	1.000022
65000.0	59.6	-59.7	0.	-0. **	97.3	568.9	211.9	24.2	1.000022
65500.0	58.2	-59.0	0.	-0. **	94.7	569.8	211.9	29.2	1.000021
66000.0	56.8	-58.3	0.	-0. **	92.1	570.8	211.9	35.5	1.000021
66500.0	55.4	-57.5	0.	-0. **	89.6	571.7	211.9	38.8	1.000020
67000.0	54.1	-56.8	0.	-0. **	87.2	572.7	211.9	39.1	1.000019
67500.0	52.8	-56.2	0.	-0. **	84.8	573.5	212.2	38.6	1.000019
68000.0	51.6	-56.1	0.	-0. **	82.8	573.6	213.4	35.3	1.000018
68500.0	50.4	-56.1	0.	-0. **	80.8	573.7	214.5	32.0	1.000018
69000.0	49.2	-56.0	0.	-0. **	78.9	573.7	216.2	29.1	1.000018
69500.0	48.0	-56.0	0.	-0. **	77.1	573.8	217.9	26.4	1.000017
70000.0	46.9	-55.9	0.	-0. **	75.2	573.9	219.6	23.6	1.000017
70500.0	45.8	-55.9	0.	-0. **	73.4	573.9	221.2	20.4	1.000016
71000.0	44.7	-55.8	0.	-0. **	71.7	574.0	222.8	17.3	1.000016
71500.0	43.7	-55.6	0.	-0. **	69.9	574.3	223.2	15.0	1.000016
72000.0	42.6	-55.1	0.	-0. **	68.1	575.0	221.4	14.4	1.000015
72500.0	41.7	-54.5	0.	-0. **	66.4	575.7	219.7	13.8	1.000015
73000.0	40.7	-54.0	0.	-0. **	64.7	576.5	217.6	12.9	1.000014
73500.0	39.7	-53.4	0.	-0. **	63.0	577.2	215.2	11.8	1.000014
74000.0	38.8	-53.0	0.	-0. **	61.4	577.8	212.9	10.8	1.000014
74500.0	37.9	-52.9	0.	-0. **	60.0	577.9	212.1	10.1	1.000013
75000.0	37.0	-52.8	0.	-0. **	58.6	578.0	212.1	9.7	1.000013
75500.0	36.2	-52.8	0.	-0. **	57.2	578.1	212.1	9.2	1.000013
76000.0	35.3	-52.7	0.	-0. **	55.9	578.2	212.1	11.0	1.000012
76500.0	34.5	-52.6	0.	-0. **	54.5	578.3	212.1	13.4	1.000012
77000.0	33.7	-52.5	0.	-0. **	53.3	578.4	212.1	15.8	1.000012
77500.0	33.0	-52.4	0.	-0. **	52.0	578.5	212.1	17.4	1.000012
78000.0	32.2	-52.4	0.	-0. **	50.8	578.6	212.1	18.9	1.000011

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

WSTN SITE COORDINATES
E 488,580 FEET
N.185,045 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
78500.0	31.4	-52.3	0.	-0. **	49.6	578.7	212.1	20.3	1.000011
79000.0	30.7	-52.2	0.	-0. **	48.4	578.8	212.1	20.5	1.000011
79500.0	30.0	-52.1	0.	-0. **	47.3	578.9	212.1	20.6	1.000011
80000.0	29.3	-52.1	0.	-0. **	46.2	579.0	212.1	18.4	1.000010
80500.0	28.6	-52.0	0.	-0. **	45.1	579.1	212.1	11.6	1.000010
81000.0	28.0	-51.9	0.	-0. **	44.1	579.2	212.1	4.8	1.000010
81500.0	27.3	-51.8	0.	-0. **	43.0	579.3	212.1	2.4	1.000010
82000.0	26.7	-51.7	0.	-0. **	42.0	579.4	212.1	2.9	1.000009
82500.0	26.1	-51.7	0.	-0. **	41.0	579.5	212.1	3.5	1.000009
83000.0	25.5	-51.6	0.	-0. **	40.1	579.6	161.6	3.7	1.000009
83500.0	24.9	-51.5	0.	-0. **	39.1	579.7	97.6	3.9	1.000009
84000.0	24.3	-51.4	0.	-0. **	38.2	579.8	33.6	4.0	1.000009
84500.0	23.8	-51.4	0.	-0. **	37.3	579.9	32.1	4.4	1.000008
85000.0	23.2	-51.3	0.	-0. **	36.5	580.0	32.1	4.9	1.000008
85500.0	22.7	-51.2	0.	-0. **	35.6	580.1	32.1	5.4	1.000008
86000.0	22.2	-51.1	0.	-0. **	34.8	580.2	32.1	6.5	1.000008
86500.0	21.6	-50.6	0.	-0. **	33.9	580.9	32.1	7.7	1.000008
87000.0	21.2	-49.8	0.	-0. **	33.0	581.9	32.1	8.6	1.000007
87500.0	20.7	-49.0	0.	-0. **	32.1	582.9	32.1	8.7	1.000007
88000.0	20.2	-48.3	0.	-0. **	31.3	583.9	32.1	8.9	1.000007
88500.0	19.7	-47.5	0.	-0. **	30.5	584.9	15.0	8.3	1.000007
89000.0	19.3	-46.7	0.	-0. **	29.7	585.9	314.1	6.0	1.000007
89500.0	18.9	-46.2	0.	-0. **	29.0	586.6	253.2	3.7	1.000006
90000.0	18.4	-46.0	0.	-0. **	28.3	586.8	231.7	2.3	1.000006
90500.0	18.0	-45.9	0.	-0. **	27.6	587.0	291.9	2.7	1.000006
91000.0	17.6	-45.8	0.	-0. **	27.0	587.2	352.2	3.0	1.000006
91500.0	17.2	-45.6	0.	-0. **	26.4	587.3	32.1	3.0	1.000006
92000.0	16.9	-45.5	0.	-0. **	25.8	587.5	32.1	2.3	1.000006
92500.0	16.5	-45.4	0.	-0. **	25.2	587.7	32.1	1.5	1.000006
93000.0	16.2	-45.2	0.	-0. **	24.6	587.8	11.3	0.9	1.000005

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.0 FEET MSL
4 OCT. 66 0800 HRS MST
ASCENSION NO. 764

UPPER AIR DATA
0083003903
WHITE SANDS SITE
TABLE VII (Cont)

WSTM SITE COORDINATES
E 488,580 FEET
N 185,043 FEET

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
93500.0	15.8	-45.1	0.	-0. **	24.1	588.0	311.1	0.7	1.000005
94000.0	15.4	-45.0	0.	-0. **	23.5	588.2	250.9	0.5	1.000005
94500.0	15.1	-44.8	0.	-0. **	23.0	588.3	212.1	1.2	1.000005
95000.0	14.7	-44.7	0.	-0. **	22.5	588.5	212.1	3.5	1.000005
95500.0	14.4	-44.6	0.	-0. **	21.9	588.7	212.1	5.8	1.000005
96000.0	14.1	-44.5	0.	-0. **	21.4	588.8	212.1	7.8	1.000005
96500.0	13.8	-44.3	0.	-0. **	21.0	589.0	212.1	9.1	1.000005
97000.0	13.5	-44.2	0.	-0. **	20.5	589.2	212.1	10.5	1.000005
97500.0	13.2	-44.1	0.	-0. **	20.0	589.4	212.1	11.0	1.000004
98000.0	12.9	-43.9	0.	-0. **	19.6	589.5	212.1	9.8	1.000004
98500.0	12.6	-43.8	0.	-0. **	19.1	589.7	212.1	8.5	1.000004
99000.0	12.3	-43.7	0.	-0. **	18.7	589.9	212.1	7.2	1.000004
99500.0	12.0	-43.5	0.	-0. **	18.2	590.0	212.1	6.2	1.000004
100000.0	11.8	-43.4	0.	-0. **	17.8	590.2	212.1	5.3	1.000004
100500.0	11.5	-43.3	0.	-0. **	17.4	590.4	212.1	4.4	1.000004
101000.0	11.2	-43.1	0.	-0. **	17.0	590.5			1.000004
101500.0	11.0	-43.0	0.	-0. **	16.6	590.7			1.000004
102000.0	10.7	-42.9	0.	-0. **	16.3	590.9			1.000004
102500.0	10.5	-42.7	0.	-0. **	15.9	591.0			1.000004
103000.0	10.3	-42.6	0.	-0. **	15.5	591.2			1.000003
103500.0	10.0	-42.5	0.	-0. **	15.2	591.4			1.000003
104000.0	9.8	-42.4	0.	-0. **	14.8	591.5			1.000003
104500.0	9.6	-42.2	0.	-0. **	14.5	591.7			1.000003

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

RELEASE TIME (MST)		SECOND-STAGE IMPACT DISPLACEMENT IN MILES DUE TO WIND								AZIMUTH (DEGREES)	THEORETICAL IMPACT FROM LAUNCHER (IN MILES)		
		11-216 FT		216-4000 FT		4000-73497 FT		TOTAL					
RAWINSONDE	PIBAL	N-S	E-W	N-S	E-W	N-S	E-W	N-S	E-W		RANGE	N-S	E-W
0500	0600	8.3N	0.0	23.1N	2.3E	18.6S	18.4W	12.8N	16.1W	353.7	66.5	66.1N	7.3W
0500	0630	10.0N	1.5E	22.5N	2.0E	18.6S	18.4W	13.9N	14.9W	351.9	67.5	67.2N	6.1W
0500	0700	8.8N	1.2E	20.3N	1.9E	18.6S	18.4W	10.5N	15.3W	352.4	64.4	63.8W	8.5W
0500	0720	14.9N	4.0E	22.4N	2.2E	18.6S	18.4W	18.7N	12.2W	357.3	72.1	72.0N	3.4W
0500	0735	12.1N	3.6E	22.6N	3.5E	18.6S	18.4W	16.1N	11.3W	357.9	69.4	69.4N	2.5W
0500	0742	11.9N	1.3E	22.6N	3.8E	18.6S	18.4W	15.9N	13.3W	356.3	69.4	69.2N	4.5W
0500	0750	13.3N	2.7E	22.5N	3.8E	18.6S	18.4W	17.2N	11.9W	357.5	70.6	70.5N	3.1W
0500	0803	14.7N	2.8E	24.6N	3.9E	18.6S	18.4W	20.7N	11.7W	357.7	74.1	74.0N	2.9W
0800	0802	14.7N	2.8E	24.6N	3.9E	13.5S	13.6W	15.8N	6.9W	001.4	79.1	79.1N	1.9E

	AZIMUTH (DEGREES)	MILES FROM LAUNCHER		
		RANGE	N-S	E-W
LAUNCHER SETTING (ELEVATION 86.1 DEGREES QE)	014.0	54.9	53.3N	13.7E
NO WIND IMPACT	009.4	54.0	52.3N	8.8E
PREDICTED SECOND-STAGE IMPACT	357.6	70.0	69.9N	2.9W
SECOND-STAGE IMPACT, RADAR TRACK	357.8	66.6	66.5N	2.5W
PREDICTED BOOSTER IMPACT	014.0	0.8	0.8N	0.2E
ACTUAL BOOSTER IMPACT	N/A	N/A	N/A	N/A

TABLE VIII. IMPACT PREDICTION DATA
NIKE-HYDAC STV (SR-040)

UNCLASSIFIED
Security Classification

DOCUMENT CONTROL DATA - R&D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)
U. S. Army Electronics Command
Fort Monmouth, New Jersey

2a. REPORT SECURITY CLASSIFICATION
UNCLASSIFIED

2b. GROUP

3. REPORT TITLE
METEOROLOGICAL DATA REPORT, NIKE-HYDAC STV (SR-040)

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

5. AUTHOR(S) (Last name, first name, initial)
CARTER, Len E.

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
November 1966	22	None

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
b. PROJECT NO.	DR-103
c. DA Task 1V650212A127-02	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

10. AVAILABILITY/LIMITATION NOTICES
Distribution of this document is unlimited.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
	U. S. Army Electronics Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico

13. ABSTRACT

Meteorological data gathered for the launching of Nike-Hydac STV (SR-040) are presented for the Ballistic Systems Division, U. S. Air Force, Avco Corporation and for ballistic studies. The data appear, along with calculated ballistic data, in tabular form.

DD FORM 1 JAN 64 1473

UNCLASSIFIED
Security Classification

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KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
1. Ballistics 2. Meteorology 3. Wind						

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